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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,540	11/26/2003	Maria Kallergi	1372.96.PRC	9744
21901	7590	06/06/2007		
SMITH HOPEN, PA 180 PINE AVENUE NORTH OLDSMAR, FL 34677			EXAMINER SCHAFFER, JONATHAN C	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 06/06/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/723,540

**Applicant(s)**

KALLERGI, MARIA

**Examiner**

Jonathan C. Schaffer

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/12/2004</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts (U.S. Patent Number 6,056,690), in view of Bamberger et al. (U.S. Patent Number 5,854,851)

3. Regarding claim 1 Roberts teaches a method of analyzing the shape and distribution of the calcifications in combination with other non-image data as is evidenced by Figures 3 and 4 and their supporting literature. Furthermore Roberts differentiates between benign and malignant calcification clusters and the statistical likelihood of malignancy using the predefined classifier seen in Figures 4 and 5A-5J. Roberts is however silent to the limitation of detecting and segmenting the breast calcifications from the mammographic images of a patient even though Roberts uses data that could only be determined if these steps of the method were preformed. Bamberger however discloses in great detail the detecting and segmenting of mammographic images in determining a wide range of information regarding breast calcifications specifically the information used by Roberts such as size, shape, boundaries, and distribution (col. 14 - 23). It therefore would have been obvious to one of ordinary skill in the art to which the Applicant's claimed invention pertains to combine the teachings of Roberts with the teachings of Bamberger to create a more robust and efficient method, which in cancer cases is of the utmost importance.

4. Regarding claim 2, Roberts discloses the composition of the predefined classifier, which is generated from a population of known benign and malignant calcification clusters in at least Figures 5A-5J.

5. Regarding claim 3, Roberts discloses using shape descriptors in at least Figure 3.

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6. Regarding claim 4, Roberts discloses using regional descriptors, which are, comprised of at least the size of the calcifications, which read on area, and compactness of the object in at least Figure 3.
7. Regarding claim 5, Roberts discloses using boundary descriptors which comprise at least the shape of the calcification clusters in at least Figure 3.
8. Regarding claim 6, Roberts discloses inputting the patient's non-image data as at least demographic data, which links the image data to the patient. Roberts discloses the data to include at least the patient's age, the patient's physical data in the form of the patient's age of first menarche, age of first live birth and information relating to the previous biopsy at the site, also disclosed is the patient's family history, the patient's history in the form of the aforementioned as well as the patient's lab history. Roberts does not mention the demographic data as including the patient's race, weight or gender. The Examiner is taking Official Notice that it would have been obvious to one of ordinary skill in the art to which the Applicant's claimed invention pertains to include the patient's race, weight and gender in the demographic data because they are exceedingly well known aspects of routine demographic data especially in the medical field where they are well known components of most medical diagnoses.
9. Regarding claim 7, see the above rejections.
10. Regarding claim 8, Roberts teaches the automatic system as being a computer aided diagnosis of medical imaging as seen in Figures 4, and 32-35.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mascio (U.S. Patent Number 5,586,160) is considered especially pertinent due to the disclosure of automatically locating microcalcifications indicating breast cancer.

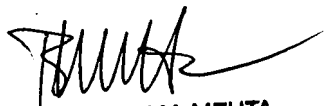
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Schaffer whose telephone number is (571) 272-0603. The examiner can normally be reached on 7:30-4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571)272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS

  
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